* **SOUND & LIGHT**

**Properties of Sound**

* Type of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* They are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Move directions \_\_\_\_\_\_\_\_\_\_\_ from the source.
* \_\_\_\_\_\_\_\_\_\_\_ of sound depends on the \_\_\_\_\_\_\_\_\_\_

**Density and Sound**

* The \_\_\_\_\_\_\_\_\_ of the \_\_\_\_\_\_\_ affects the \_\_\_\_\_\_\_\_\_\_\_\_ at which \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through the medium.
* Mediums that are \_\_\_\_\_\_\_\_\_ allow sound to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because the particles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ also affects the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_ temperature allow sounds to move \_\_\_\_\_\_\_\_ than \_\_\_\_\_\_\_\_\_\_ temperatures.

***Ultrasound and Sonar***

* Like all waves, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The reflection of sound waves can be used to determine distance and to create maps and images
* *\_\_\_\_\_\_\_\_\_*is a system that uses reflected sound waves to determine the distance to and location of objects
* What wave behavior is being used to do this?

**Light**

* Type of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Light behaves like a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of energy
* Light can also behave as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Travels without a medium (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_), but can move \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ depends on the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Travels the fastest in a \_\_\_\_\_\_\_\_\_\_\_: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_ is the fastest signal in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Slows down as \_\_\_\_\_\_\_\_\_\_\_\_ of materials ( \_\_\_\_\_\_\_\_\_\_\_\_\_) \_\_\_\_\_\_\_\_\_\_\_\_
* Why do we see lightning before we hear it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Fill in the Diagram**

**Electromagnetic Spectrum- Types of light**

* EM Spectrum- the range of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ over which \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ extends.
* Waves are classified by their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ As wavelength increases, frequency \_\_\_\_\_\_\_\_\_\_\_, it contains \_\_\_\_\_\_\_\_ energy.
	+ As wavelength decreases, frequency \_\_\_\_\_\_\_\_\_\_\_, it contains \_\_\_\_\_\_\_\_ energy.

**EMS Starting from longest Wavelength to Shortest Wavelength**

Which radio station has the shortest wavelength?

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Atlanta Radio Stations**

WRFG 79.3 MHz

WZGC 82.9 MHz

WVEE 101.3 MHz

WYAY 105.7 MHz

* + are used in communication and radar
	+ Lowest \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ used in cooking and communication
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_over a long distance. (Space to Earth)
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ can be felt as\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Sun or a heat lamp \_\_\_\_\_\_\_\_\_\_\_
	+ Weather satellites read (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) for the tracking of cloud movement
* Visible Light Spectrum
* Light \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – Acronym for remembering the colors of visible light
	+ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 R- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 O- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Y- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 G-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 B-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 I-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 V-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ has higher energy and shorter wavelengths than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	+ \_\_\_\_\_\_\_\_\_\_\_ contains ultraviolet light (UV rays) (9%)
	+ UV rays can pass through thin layers of clouds, causing sunburn.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ X rays has the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ wavelength.
	+ Helpful in \_\_\_\_\_\_\_\_\_\_\_ procedures due to being able to pass through our bodies and create \_\_\_\_\_\_\_
	+ Harmful in that they can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Gamma rays have the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the \_\_\_\_\_\_\_\_\_\_\_\_\_ wavelengths.
	+ Helpful during medical procedures and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_\_ harmful in that they can also increase cancer rates and \_\_\_\_\_\_\_\_ good \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Doppler Effect**

* An observed \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the \_\_\_\_\_\_\_\_\_\_\_\_\_ of a wave when the \_\_\_\_\_\_\_\_\_\_\_\_ or observer is \_\_\_\_\_\_\_\_\_\_
* Occurs in\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* As frequency change, there is a change in \_\_\_\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_).
* As frequency changes, there is a change is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
* Frequency changes when the source \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Ex.
* *What happens to the amount of energy as the ambulance moves farther from the girl?*

**Fill in the Venn diagram using the following. Place them where they belong.**

* **Transverse Wave**
* **Longitudinal wave**
* **Can only travel through a medium**
* **Can travel through a medium or a vacuum**
* **Waves that transfer energy**
* **Speed around 300,000,000 m/s**
* **Speed around 343 m/s**
* **Can’t see them**
* **Can travel through matter**
* **Can see some of them**
* **Reflection, and refraction**
* **Speeds up when they go liquid & solid**
* **Slows down when passing liquid & solid**

 **Sound Wave Light Wave**

 **Both**





